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Appraisal of Railroad Land

BY

The Somers Unit System of Realty Valuation

A Study of the Land Values of the Broad Street Passenger Terminal and Connecting Right of Way in Philadelphia; Showing the Unit Foot Values of Street Accessibility to Contiguous and Similar Land, and Block Computations by the Somers Rules and Tables.

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Use of Somers System for Appraisal of Railroad Land Sites

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As compared to the difficulties connected with the appraisal of the land "used and useful" to the railroads of the United States, the task of appraising the "man-made" property of the railroads is comparatively simple. In the case of property other than land, the kinds, the quantities and the unit prices for computing new reproductive costs may be ascertained or computed with comparative ease. The difficulty of this task lies only in its magnitude. The application of factors of depreciation, where depreciation exists, requires the exercise of judgment, but that judgment may be simplified within a reasonable range of diversity of opinion. The results of two independent appraisals under a specific understanding as to the point of view to be worked out could not show a wide variance as to the fair value of the man-made property of even the largest of American railroad properties.

LACK OF LAND VALUATION SYSTEM.

But the valuation of the land sites comprising terminals, rights of way, water privileges and business headquarters of the interstate railways involves tremendous difficulties, both as to the problem itself, and as to the manner in which the work may best be carried out. The legal theory that the value of a land site is what a willing buyer who is not compelled to buy will pay a willing seller who is not compelled to sell, has in the past been so flexible as to admit of appraisals by experts of recognized knowledge, ability and integrity varying hundreds and even thousands of per cent, one with another. If the appraisal of railroad land is to be promptly made, and if it is to have any real value after it has been completed, there must be adopted a standard or system for the appraisal of land values that will enable the Interstate

Commerce Commission and the Railroad Companies to analyze all the elements that go to make up site values, and to reach some ground of substantial agreement as to the principles involved and the means of establishing such principles in the appraisal of each and all railroad properties.

One of the requirements of the law directing the appraisal of the railroads is that "fair value" of land sites shall be ascertained. A rule of interpretation of "fair value" was laid down by the United States Supreme Court in its decision in the Minnesota rate cases, when it said the value of land should properly be ascertained "by comparison with the value of contiguous and similar land." A similar and more definite rule is laid down in the Ohio statutory description of a valuation of the land of public utilities as ascertainable "by comparison with the value of contiguous and neighboring land and land of similar character as to location and use."

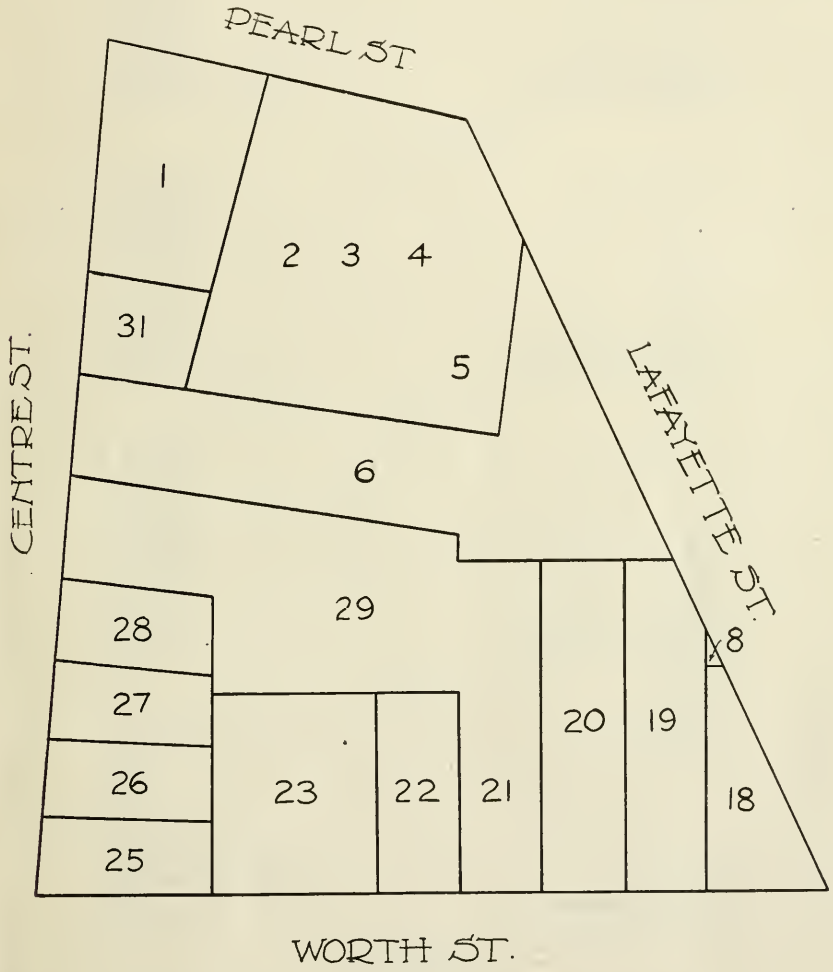
SOMERS SYSTEM WILL SOLVE PROBLEM.

Both of these descriptions, I believe, are comprehended in the Somers System Method of appraising land, and for illustrative purposes I have had this appraisal made of certain railroad lands in the city of Philadelphia; and an examination of this report and a careful study of the methods followed will, I believe, be helpful to those who are charged with the responsibility for the appraisal of land on behalf of both the Government officials and the common carriers. There is no purpose to attempt to forecast decision as to the question whether or not present "fair value," or original cost, or some other consideration should rule in the final determination. Nor is it my purpose to attempt to say whether the Commission or the carriers shall accept sales, rentals, private or community opinion as the ultimate basis for making the comparisons of land value defined in the Supreme Court decision. But whatever principles may be determined upon will require a standard for the measurement of judgment that will work uniformly and accurately. A careful reading of the description of the Philadelphia appraisal will, I trust, prove that the Somers System is at least the best system in existence for the measurement of judgment as to land values. Under its use it will be possible to secure the widest possible comparison of the value of contiguous land sites. Such comparisons, when made as to the value of a single element of accessibility, admit of a true comparison; and when unit values have once been established, it will be possible under the Somers System mathematical tables to compute the relative or comparative values of each lot so as to show the enhancement due to each element going to increase value, or the lessened value due to any condition which may be judged to detract from normal value.

NECESSITY FOR APPRAISAL STANDARD SHOWN.

A vivid illustration of the lack of system in appraisal methods is found in recent proceedings in New York City to condemn four blocks of land for the new county buildings in that city. A diagram of one of these blocks, showing the outlines of the several lots is printed herewith. Six of the leading real estate experts of New York City gave sworn testimony as to the values of these lots, these experts being represented in the statement of appraisal

opinions by initial letters. Following these appraisals will be found for each lot the tax assessment, and a computation by the Somers System tables, from



Map of New York City Block condemned for new Court House. See appraised values for each lot by expert appraisers, by the assessor, and by Somers System.

unit foot values of $2,000 upon Pearl, LaFayette and Center Streets, and $1,450 on Broad Street. These appraisals are as follows:

Lot No. 1.

Appraiser B.	$115,500
" D.	174,060
" G.	120,000
" K.	130,000
" P.	105,000
" R.	106,500
Tax Assessment	60,000
Somers Computation	99,888

Lots Nos. 2, 3, 4, 5.

Appraiser B.	$173,000
" D.	305,635
" G.	190,000
" K.	185,000
" P.	145,996
" R.	274,500
Tax Assessment	114,000
Somers Computation	190,604

Lot No. 6.

Appraiser B.	$155,000
" D.	170,000
" G.	160,000
" K.	152,500
" P.	121,400
" R.	150,000
Tax Assessment	110,000
Somers Computation	127,632

Lot No. 8.

Appraiser B.	$1,000
" D.	3,000
" G.	5,000
" K.	5,000
" P.	5,000
" R.	2,890
Tax Assessment	1,000
Somers Computation	1,133

Lot No. 18.

Appraiser B.	$40,000
" D.	94,100
" G.	47,000
" K.	37,000
" P.	32,832
" R.	69,600
Tax Assessment	30,000
Somers Computation	49,883

Lot No. 19.

Appraiser B.	$34,000
" D.	58,240
" G.	47,000
" K.	40,000
" P.	40,754
" R.	57,000
Tax Assessment	26,000
Somers Computation	60,071

Lot No. 20.

Appraiser B.	$30,000
" D.	41,500
" G.	33,000
" K.	31,000
" R.	40,550
Tax Assessment	20,000
Somers Computation	45,871

Lots Nos. 21, 29.

Appraiser B.	$120,500
" D.	99,610
" G.	96,000
" K.	104,000
" P.	98,464
" R.	101,650
Tax Assessment	65,000
Somers Computation	102,012

Lot No. 22.

Tax Assessment	$17,000
Somers Computation	24,709

Lot No. 23.

Appraiser B.	$48,000
" D.	64,150
" G.	50,000
" K.	55,000
" P.	53,609
" R.	67,500
Tax Assessment	45,000
Somers Computation	57,772

Lot No. 25.

Appraiser B	$49,000
" D	60,000
" G	40,000
" K	40,000
" P	40,672
" R	43,935
Tax Assessment	25,000
Somers Computation	39,904

Lot No. 26.

Appraiser B	$31,000
" D	43,750
" G	28,000
" K	27,500
" P	27,880
" R	33,000
Tax Assessment	18,000
Somers Computation	31,732

Lot No. 27.

Appraiser B	$33,000
" D	41,215
" G	25,000
" K	27,000
" P	28,240
" R	32,250
Tax Assessment	18,500
Somers Computation	30,474

Lot No. 28.

Appraiser B	$29,000
" D	35,200
" G	26,000
" K	26,000
" P	27,518
" R	30,000
Tax Assessment	17,500
Somers Computation	28,956

It is quite apparent that each appraiser attempted to consider some sort of a mathematical ratio in appraising those lots having a single element of accessibility, but that corner advantage was considered differently by the various experts. It is also certain that these same experts, if employed to judge unit foot values, would practically agree, and that the use of mathematical computations for corner lots would after experience be approved by them.

TEST OF THIS APPRAISAL INVITED.

In the appraisal of the Broad Street Terminal property, I believe that our appraisers have judged the street unit-foot values carefully and accurately. Three years ago a similar appraisal of $35,000,000 worth of Philadelphia business property, when analyzed by a committee of disinterested experts appointed for the Philadelphia City Councils, stood the test of their criticism with a net change of less than 1½ per cent. We believe that no appraisal based upon public opinion and the best disinterested expert opinion in the city of Philadelphia will change this valuation materially. Our appraisal has been made upon our own initiative, in the hope that both the Interstate Commerce Commission and the common carriers will appreciate the advantages of the Somers System as a standard for the measurement of judgment as to land values. We invite the fullest criticism, both of the unit-foot values and of the computations resulting therefrom.

PROPERTY APPRAISED.

The appraisal includes all the property of the Railroad actually used for terminal, yards and right-of-way between Broad Street (West Penn Square) and the Schuylkill River, including a coal yard owned by the Railroad on the north side of Commerce Street between Twenty-First and Twenty-Second Streets. This coal yard has been included as it is contiguous to the right-of-way and the Railroad uses a trestle in the yard for car storage.

The appraisal does not include numerous adjacent properties which have been purchased for future additions to terminal, yards and right-of-way.

No value has been placed upon the rights given the Railroad to cross numerous streets on elevated structures. Nor has any value been placed on the rights to close certain streets except the actual value of the land as hereinafter indicated.

That part of the right-of-way of the Baltimore & Ohio Railroad under the right-of-way of the Pennsylvania Railroad has also been omitted. Available maps indicate that this property belongs to the Pennsylvania Railroad, but in the absence of exact railroad maps and records it has been omitted. This omission is intentional and would not materially affect the totals of the appraisal even if included.

DESCRIPTION AND TOTAL VALUES OF LAND.

The terminal, yards and right-of-way of the Pennsylvania Railroad covered by this appraisal occupy twelve parcels of land which have been numbered for convenience of consideration in this report. The boundaries and the total values at which we have appraised each lot, are as follows:

Block No. 1—Rectangular lot measuring 122.6 feet on Filbert Street to the north, 306 feet on Broad Street (West Penn Square) to the east, 122.6 feet on Market Street to the south, and 306 feet on Fifteenth Street to the west $4,262,188

Block No. 2—Rectangular lot measuring 396 feet on Filbert Street to the north, 306 feet on Fifteenth Street to the east, 396 feet on Market Street to the south and 306 feet on Sixteenth Street to the west.....$3,748,565

Block No. 3—Rectangular lot measuring 396 feet on Filbert Street to the north, 306 feet on Sixteenth Street to the west, 396 feet on Market Street to the south and 306 feet on Seventeenth Street to the west....$1,526,970

Block No. 4—Rectangular lot measuring 396 feet on Filbert Street to the north, 306 feet on Seventeenth Street to the east, 396 feet on Market Street to the south and 306 feet on Eighteenth Street to the west....$1,166,125

Block No. 5—Rectangular lot measuring 396 feet on Filbert Street to the north, 106 feet on Eighteenth Street to the east, 396 feet on Commerce Street to the south and 106 feet on Nineteenth Street to the west $285,640

Block No. 5A—Rectangular lot at the southwest corner of Eighteenth and Commerce Streets measuring 74 feet on Commerce Street to the north, 55 feet on Eighteenth Street to the east, 74 feet along property now or late of Henry R. Shock, and 55 feet to the west along property of Fidelity Storage & Warehouse Company.....$40,385

Block No. 6—Rectangular lot measuring 396 feet on Filbert Street to the north, 106 feet on Nineteenth Street to the east, 396 feet on Commerce Street to the south and 106 feet on Twentieth Street to the west $244,694

Block No. 7—Practically rectangular lot measuring 495 feet on Cuthbert Street to the north, 268 feet on Twentieth Street to the east, 495.08 feet on Commerce Street to the south and 267 feet on Twenty-First Street to the west $437,562

Block No. 8—Rectangular lot measuring 396 feet on Walden Street to the north, 364.38 feet on Twenty-First Street to the east, 396 feet on Commerce Street to the south and 364.38 feet on Tweuty-Second Street to the west $419,234

Block No. 9—Practically rectangular lot measuring 273 feet on Cuthbert Street to the north, 159 feet on Twenty-Second Street to the east, 273 feet along property of the City of Philadelphia to the south and 156 feet on Twenty-Third Street to the west.....$98,898

Block No. 10—Irregular lot measuring 357.1 feet along the property of the Quaker City Mortar Company to the north, 108 feet on Twenty-Third Street to the east, 395.5 feet along property of John Wanamaker to the south, and irregular lines along right-of-way of the Baltimore & Ohio Railroad to the west $51,128

Block No. 10A—Irregular lot measuring about 19 feet along properties of the Schuylkill Improvement Land Company and Schuylkill River East Side Railroad Company to the north, about 109 feet along right-of-way of the Baltimore & Ohio Railroad to the east, 25.6 feet along property of John Wanamaker to the south, and 111.7 feet on Schuylkill River to the west $5,945

Grand Total $12,287,334

Bridges over intersecting streets and the right-of-way of the Baltimore & Ohio Railroad (Schuylkill River East Side Railroad) connect these several blocks.

STATEMENT OF SURROUNDING CONDITIONS.

It is our purpose to show the true present value of the property included in this appraisal. By this we mean its present fair value at an open sale, presuming the various parcels were to be abandoned for right-of-way, terminal and yards. It is a fact not to be ignored that if all this property were offered for sale at once there would not be a market for it at the appraised figures, but in our opinion an appraisal on such a basis would be neither fair nor an indication of true values. Our efforts, therefore, have been directed to ascertain the fair value of the various parcels based upon comparisons with the present value of contiguous and similar property, due consideration being given to selling prices and rentals, and the opinions of those familiar with this section of Philadelphia. The data upon which the valuations given to the street units upon each block was collected by our Philadelphia real estate appraisers, and can be submitted in proof of the correctness of the unit values if any discussion may arise concerning the appraised values.

This property of the Pennsylvania Railroad is surrounded by real estate of both high and low values. At the eastern end of the right-of-way is the terminal—Broad Street Station—in the heart of the city. It is surrounded by high-priced real estate used by banks, office buildings and retail business. The most valuable part of the frontage is on Market Street, directly opposite the entrance to the station. It is there that a Somers unit-foot has been valued at $10,000. The second most valuable frontage owned by the railroad is that on Broad Street (West Penn Square), where the unit value has been appraised at $8,000. Filbert Street to the north is somewhat less valuable, as indicated by the unit value of $6,500.

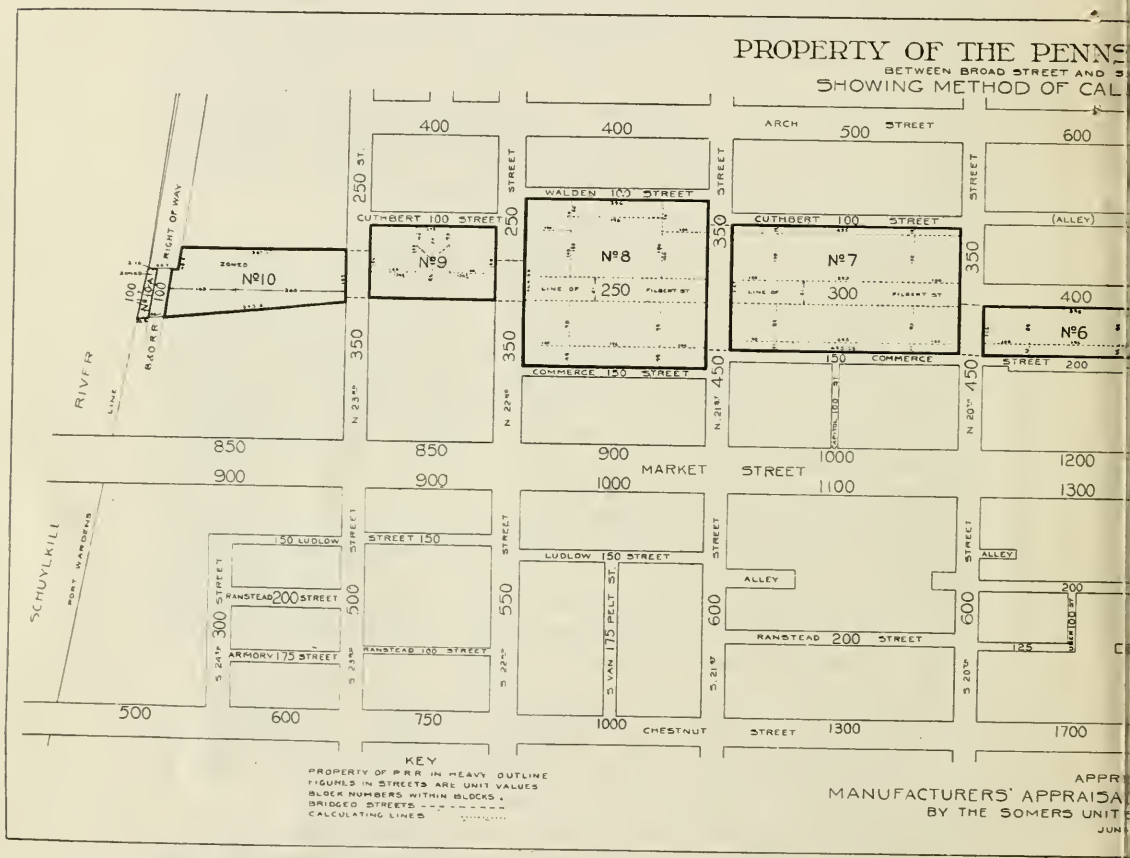
South of Market Street, Fifteenth Street is the most valuable north and south street in the city except Broad. Its value between Market and Filbert Streets has been placed at $4,000 a unit foot, which is somewhat higher than values in the same thoroughfare north of Filbert. Although this block is not the largest of the several comprising the property of the railroad, it is the most advantageously situated and most valuable.

West of Fifteenth Street there is a complete change in the character of the usefulness of land sites, and values decrease rapidly. Immediately west the unit value on Market Street is $5,500, gradually lessening until it reaches $3,600 near Sixteenth Street. From there it shades down gradually on the north side of the street to $850 at the Schuylkill River.

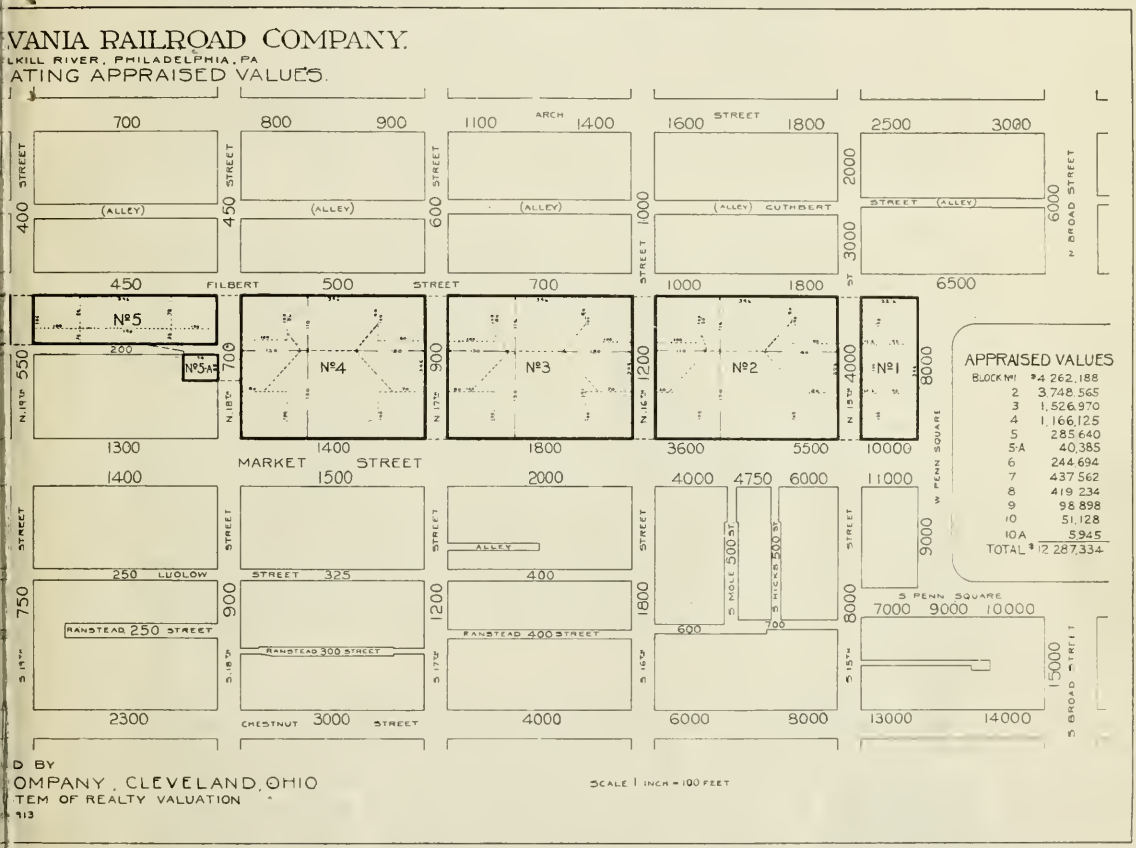
The decrease in values on Filbert Street is even more marked. From a desirable retail and transient hotel location, now somewhat impaired by the beginning of a parkway, it rapidly becomes a second-rate business and lodging house district. The railroad has acquired many of the properties in this section of Filbert Street and the cross streets. Values have been stationary for several years, and some owners have been glad to dispose of their holdings at low prices.

West of Fifteenth Street the values of the cross streets are invariably less than the value of Market Street, and more than that of Filbert Street at the points of intersection. There is not a constant ratio, but it approximates one-third to one-half.

The values of frontages on the Schuylkill River and the Baltimore & Ohio Railroad north of Market Street are somewhat uncertain. There is little active



MAP OF BROAD STREET STATION OF PENNSYLVANIA RAILROAD IN PHILADELPHIA. The figues in streets represent values of Somers



Unit-Foot. Heavy lines represent the property appraised. Dotted lines represent areas of computation.

demand at either point, but with one exception such land as is not used by various railroads is occupied by factories and warehouses. Almost all such land has some additional means of access of greater value than either the Baltimore & Ohio Railroad or the Schuylkill River. Consideration of all available facts regarding such property has led to the valuation of units of $100 on both River and Railroad.

THE SOMERS SYSTEM OF APPRAISAL BRIEFLY EXPLAINED.

In making this appraisal the Somers Unit System of Realty Valuation was used. This system is partly the discovery—partly invention—of Mr. W. A. Somers of New York City. It is based upon the acknowledged principles of land valuation, as developed by Mr. Somers by many years of investigation, and is mathematical in its operation. Briefly it may be described as based upon the following theories:

There is a mathematical relation between the values of all city sites subject to the same influences of street accessibility or usefulness. In the valuation of land this fact is of basic importance, establishing as it does a law of appraisal. To illustrate in simplest form, if at a certain location one foot front of a given depth is worth $1,000, twenty feet will be worth $20,000, and thirty-six feet, $36,000. The relation is clearly mathematical, and is acknowledged in valuations of sites having simple problems for consideration.

There is an equally definite relation between the values of sites of interior different depths. For example, the value of a front foot 100 feet deep being known, all real estate experts agree that the front fifty feet is worth between two-thirds and three-fourths of the total value. The most careful investigation as to the relative values of sites of different depths ever conducted was made by Mr. Somers. The results of this investigation have been summarized in the form of a table showing the relation in percentages between a site 100 feet deep, and every receding foot from one to 700. This table may be said to be a practical statement of the law of the constant effect of depth upon site values.

The mathematical relation between the values of lots having a single street accessibility—those not affected by corner influences—is acknowledged by every real estate broker, expert, assessor, buyer and seller of realty. Because of less general knowledge and understanding of the subject, there is less agreement as to the definite mathematical relation between the values of lots at and near corners, as compared with the interior frontage sites on the streets forming a corner, although the relation is just as mathematically exact. This relation may be stated in this form: The value of every lot at and near a corner is directly due to and proportionate to the values of the intersecting streets. Opinion as to the usefulness of the streets being in truth the basis of all judgments of site values, the Somers computation system has been designed to secure the most intelligent expression as to the value of street usefulness in the form of appraisal of the value of a Somers unit-foot (at points away from corner influence) and to compute mathematically the normal relation thereto of lots enhanced by nearness to and location at corners. If for any reason an abnormal condition affects corner values favorably or unfavorably, addition or deduction therefor may be made as for a separate factor.

The Somers System provides for the mathematical calculation of values of land at and near corners. At the corner to be computed is drawn a diagram 100 feet square, and this lot is divided into 100 squares, ten feet square each. The Somers corner tables give the value of each of these squares for

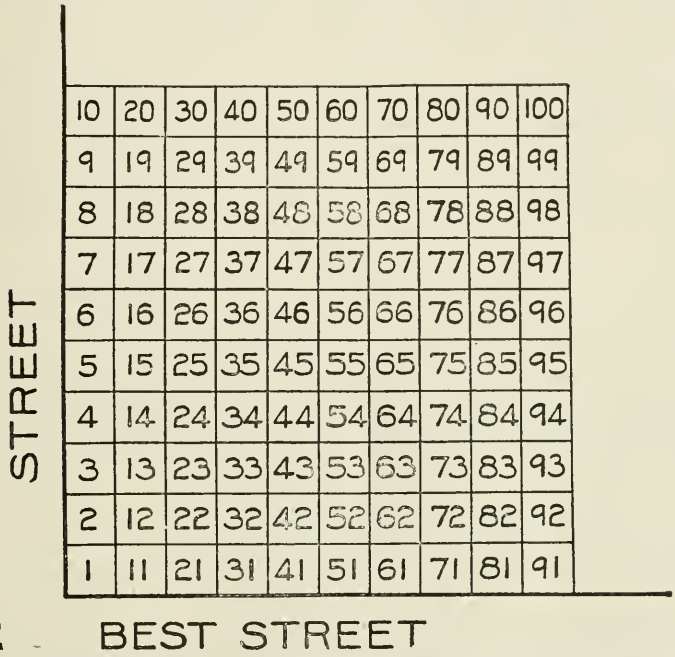


Diagram showing distribution of corner influence by 10-foot squares by the Somers System.

every conceivable combination of values coming together at the corner. The values given in these tables are comparable in a sense to a table of logarithms, or an interest table. These tables express values in dollars, and they are always the estimate compiled by Mr. Somers of the mathematical effect of the appraised unit values of the two streets upon each ten-foot-square plot, no matter where in the 100-foot square it may be located. The ten-foot-square plot at the corner of two intersecting streets is the most valuable, the values of the other squares receding in curves in every direction from this corner square. These curves are commensurate with the mathematical effect of one unit value upon the other. The actual lots to be computed are diagrammed upon the 100-foot square at the corner, and the total value of each square and part of a square inside the lot lines is ascertained by addition, thus producing the value of each lot, and apportioning to each lot within the corner influence its share of the enhancement of value by reason of the street intersection. It does not matter, therefore, in what way the land at the corner is divided as to lots, as there will be actual computation in dollar value for every part of it, instead of the addition of an arbitrarily selected percentage as compared with the value of interior lots on either of the intersecting streets. When the enhancement of value does not reach 100 feet in either di-

rection from the corner, these corner lot tables measure it only as far as it goes. When the enhancement of value extends beyond 100 feet, there is another set of tables, called "overlap tables," which not only compute the fact, but also the exact place where the enhancement extends, and the amount that each foot of land is enhanced. In other words, whatever the corner effect, the Somers System works out that effect into dollars.

By mechanical devices these same corner lot tables and overlap tables may be applied to lots at acute and obtuse angle corners. By means of "zone tables," irregularly shaped lots are valued upon the basis of the judgment of the value of the unit. By this same set of tables is ascertained the exact extent of the influence of a street, so that when a lot extends through from one street to another, it is possible to discover exactly the point where the influences of two streets on the opposite side of a block meet at a common value.

Alley effect is generally treated as follows: The land value of the alley is computed, based upon the unit values controlling it, and that land value is pro-rated against every foot of land abutting upon the alley.

There are five processes in valuing sites by the Somers System:

First—The use of the depth curve, or percentage of depth table, showing the value of interior lots without alleys, as compared with the value of the unit.

Second—The corner lot tables, by which the enhanced value at or near corners is mathematically and equitably distributed.

Third—the zone tables, by which the value of irregular shapes is ascertained.

Fourth—The over-lap tables, by which the effect of streets whose influences run in opposite directions is exactly ascertained, thus making it possible to apply unit values to lots running from street to street, and also to ascertain other valuable data for land valuation.

Fifth—Alley valuation, by which the effect of alleys is equitably distributed.

It will therefore be seen that the Somers System is most comprehensive in its scope, and that it undertakes to ascertain and value every separate factor, and every combination of factors, and is workable in every part of every city.

In appraising land values it is necessary to make numerous comparisons of location and streets. The expert knowing that land in a given location is worth a certain amount, reaches an opinion regarding the adjacent location under consideration by making comparisons. The one great objection to such methods is that, in the absence of a comprehensive valuation system, intelligent comparisons cannot be made of unlike quantities. Thus the most expert appraiser cannot satisfactorily compare the value of an inside lot 37x160 feet, judged to be worth $12,000, with the value of an inside lot 24x95 feet adjoining. Before the comparison can be made the problem must be simplified. The appraiser must find the value of the first lot per front foot; then allowance must be made for the lesser depth of the lot of unknown value. When this is done, the value of the second lot may be obtained by multiplying by the frontage of twenty-four feet.

Variations in sizes, shapes and locations preclude any real comparison. The Somers System overcomes this difficulty by the adoption of a quantity-unit, which is to land valuation what the yardstick is to the dry-goods merchant, the quart to the milk dealer, the pound to the grocer. It is a unit or standard of quantity. A Somers unit-foot may be defined as a frontage of ground one foot wide and 100 feet deep, located in the central section of a block at a distance from any street corner or other influence that might affect its value, other than that which it obtains by reason of access to the life and business of the city through its own frontage. By confining judgment of values to the unit-foot the confusing factors of size and shape, and enhancement due to corners and alleys, are for the time eliminated. Opinions regarding the value of a unit-foot can be easily compared, while opinions regarding values of lots of different size and shape, cannot be intelligently compared.

Therefore the bases of all values are indicated in this report in both text and maps as the value of a unit-foot. It is from the various unit values that the values of lots and blocks are computed after determination by the Somers System. In order that a comprehensive idea of land values throughout the section of the city, in which the property of the Railroad is located may be had, the accompanying map shows the judgment of our land appraisers of the value of a unit-foot upon all block frontages from Broad Street to the Schuylkill River, Chestnut to Arch Streets. This shows a practical interpretation of the thought apparent in the mind of Justice Hughes of the United States Supreme Court, when he decided that the proper course to be followed in the appraisal of railroad land should be "by comparison with the value of contiguous and similar land." We have not only appraised all of the land comprising the railroad right-of-way, but we have also at the same time extended the comparisons of the relative and actual values of various street frontages over many other contiguous and similar blocks, the additional land values involved being probably in the neighborhood of $50,000,000.

ANALYSIS OF COMPUTATIONS.

The appraised values shown in this report were computed from the unit values indicated on the map by the various processes comprising the Somers System, with the following results:

Block No. 1—Unit Values—Market Street, $10,000; Penn Square, $8,000; Filbert Street, $6,500; Fifteenth Street, $4,000.

By means of the over-lap tables the point of contact between the $8,000 unit value on Penn Square and the $4,000 unit value on Fifteenth Street is found to be 90 feet back from Broad Street, and 32.6 feet back from Fifteenth Street. The Somers corner tables show the values of the parts of the lot at and near the corners, so the lot is divided for purposes of calculation into six sections. From the Somers corner tables it is found that the section 90x100 feet at the northwest corner of Market Street and Penn Square is worth $1,369,300; the section 32.6x100 feet at the northeast corner of Market and Fifteenth Streets is worth $460,210; the section 100x90 feet at the southwest corner of Penn Square and Filbert Street is worth $1,031,872; and the section 32.6x100 feet at the southeast corner of Filbert and Fifteenth Streets is worth $347,802. The interior section 106x90 feet on Penn Square is calculated from

the unit value of $8,000 to be worth $810,688, and the corresponding section on Fifteenth Street 106x32.6 feet, is calculated from the unit value of $4,000 to be worth $242,316. Total value of block, $4,262,188.

Block No. 2—Unit Values—Market Street, $5,500, decreasing to $3,600; Fifteenth Street, $4,000; Filbert Street, $1,800, decreasing to $1,000; Sixteenth Street, $1,200.

The point of contact between the average of the unit values on Market Street ($4,550), and the average of the unit values on Filbert Street ($1,400) is 190 feet from Market Street and 116 feet from Filbert Street. These two divisions, with the four at the corners and the two abutting on Fifteenth Street and Sixteenth Street respectively, divide the block into eight sections, four regular and four irregular sections. From the Somers corner tables it is found that the section 100x100 at the northwest corner of Market and Fifteenth Streets is worth $727,809; the section 100x100 feet at the southwest corner of Fifteenth and Filbert Streets is worth $477,620; the section 100x 100 at the northeast corner of Market and Sixteenth Streets is worth $415,742; and the section 100x100 at the southeast corner of Sixteenth and Filbert Streets is worth $166,606. From the average unit value on Market Street of $4,550, it is found that the irregular section fronting 196 feet on Market Street is worth $1,100,742, and the corresponding section fronting 196 feet on Filbert Street is calculated from the average unit value of $1,400 to be worth $273,994. The section fronting 106 feet on Fifteenth Street is calculated from the unit value of $4,000 to be worth $476,072, and the similar section fronting 106 feet on Sixteenth Street is calculated from the unit value of $1,200 to be worth $109,980. Total value of block, $3,748,565.

The irregular shapes in the four interior sections as shown on the map are caused by the varying effects of the streets. Market Street effect (measured at $3,600 per unit foot) is felt beyond the first 100 feet from the corner of Market and Sixteenth Streets, (measured at $1,200 per unit foot.) The diagonal line extending from a point 30 feet from Sixteenth Street on the 100-foot line, marks the point of contact between the effect of Market and Sixteenth Streets. There is an overlapping of street effects in so much of this larger area as is found in the triangular area made by the diagonal line, the 100-foot line, and the second 100-foot line extended from Market Street. This analysis illustrates the method of ascertaining the extent of "corner influence," when such influence extends farther than 100 feet from the corner.

The same reasons obtain for the diagonal lines on the sides of all of the irregular areas of this and other diagrams in this part of this report; therefore it will not be necessary to repeat the explanations of the effect of overlap in this or other blocks.

Block No. 3—Unit Values—Market Street, $1,800; Sixteenth Street, $1,200; Seventeenth Street, $900; Filbert Street, $700.

The method of calculating is the same as that used in Block No. 2. The point of contact between Market and Filbert Streets is found to be 190 feet from Market Street and 116 feet from Filbert Street. The section 100x100 feet at the northwest corner of Market and Sixteenth Streets is found from the corner tables to be worth $233,899; the section 100x100 at the northeast corner of Market and Seventeenth Streets is worth $218,392; the section 100x

100 at the southwest corner of Sixteenth and Filbert Streets is worth $149,594; and the section 100x100 at the southeast corner of Seventeenth and Filbert Streets is worth $121,971. The irregular section fronting 196 feet on Market Street is calculated from the $1,800 unit value and depth percentage table to be worth $434,448; the similar section fronting 196 feet on Filbert Street is calculated from the $700 unit value to be worth $137,695. The section fronting 106 feet on Sixteenth Street is similarly calculated from the $1,200 unit value to be worth $136,930; and the section fronting 106 feet on Seventeenth Street is calculated on the $900 unit value to be worth $94,041. Total value of block, $1,526,970.

Block No. 4—Unit Values—Market Street, $1,400; Seventeenth Street, $900; Eighteenth Street, $700; Filbert Street, $500.

This block is calculated in the same manner as Block No. 3, the point of contact being at the same distance from Market and Filbert Streets. From the Somers corner tables it is found the section 100x100 at the northwest corner of Market and Seventeenth Streets is worth $178,451; the section 100x100 at the northeast corner of Market and Eighteenth Streets is worth $169,860; the section 100x100 at the southwest corner of Seventeenth and Filbert Streets is worth $111,377; and the section 100x100 at the southeast corner of Eighteenth and Filbert Streets is worth $91,803. The section fronting 196 feet on Market Street is calculated from the $1,400 unit value to be worth $337,904; and the corresponding section fronting 196 feet on Filbert Street is calculated from the $500 unit value to be worth $98,354. The section fronting 106 feet on Seventeenth Street is calculated from the $900 unit value to be worth $102,699; and the section fronting 106 feet on Eighteenth Street is calculated from the $700 unit value to be worth $75,677. Total value of block, $1,166,125.

Block No. 5—Unit Values—Eighteenth Street, $700; Nineteenth Street, $550; Filbert Street, $450; Commerce Street, $200.

The point of contact is found to be 70 feet from Filbert Street and 36 feet from Commerce Street. These two sections, with the four at the corners, divide the block into six divisions for calculating. From the Somers corner tables it is found that the section 70x100 feet at the southwest corner of Eighteenth and Filbert Streets is worth $67,610; the section 70x100 feet at the southeast corner of Nineteenth and Filbert Streets is worth $58,780; the section 36x100 feet at the northwest corner of Eighteenth and Commerce Streets is worth $33,166; and the section 36x100 feet at the northeast corner of Nineteenth and Filbert Streets is worth $26,947. The section 196x70 feet fronting on Filbert Street is calculated from the unit value of $450 to be worth $75,499; and the similar section 196x36 feet on Commerce Street is calculated from the $200 unit value to be worth $23,638. Total value of block, $285,640.

Block No. 5A—Unit Values—Eighteenth Street, $700; Commerce Street, $200.

All of this lot lies within the influence of the corner, and its value is taken directly from the corner tables. Total value of block, $40,385.

Block No. 6—Unit Values—Nineteenth Street, $550; Twentieth Street, $450; Filbert Street, $400; Commerce Street, $200.

The point of contact is found to be 80 feet from Filbert Street and 26 feet from Commerce Street. From the Somers corner tables the value of the section 80x100 feet at the southwest corner of Nineteenth and Filbert Streets is found to be $61,544; the section 80x100 at the southeast corner of Twentieth and Filbert Streets is worth $55,094; the section 26x100 at the northwest corner of Nineteenth and Commerce Streets is worth $20,417; and the section 26x100 feet at the northeast corner of Twentieth and Commerce Streets is $17,490. The section 196x80 feet fronting on Filbert Street is calculated from the unit value of $400 to be worth $71,266; and the corresponding section 196x26 feet on Commerce Street is similarly calculated from the $200 unit value to be worth $18,883. Total value of block, $244,694.

Block No. 7—Unit Values—Twentieth Street south of Filbert, $450; north of Filbert, $350; Twenty-First Street south of Filbert, $450; north of Filbert, $350; Commerce Street, $150; Cuthbert Street, $100.

In appraising a large block of ground of this character, it is necessary to consider its general availability for use, and such consideration at once leads to the conclusion that the block is too large to be used to the best advantage in its present form. It so happens that for its own use the Pennsylvania Railroad finds it desirable to close Filbert Street, the City of Philadelphia having officially vacated the street at the request of the Railroad. For general use, however, this block would be more desirable if Filbert Street were run through it, and the loss of the area contained in the bed of Filbert Street would be more than made up by the gain in the value due to the greater accessibility. The value of the unit in Filbert Street which for calculating purposes has been laid out, is placed at $300. This divides the block into two sections, each section being calculated as though it were surrounded by actual streets.

The point of over-lap in the section to the north of the line of Filbert Street is 100 feet from that thoroughfare, and sixteen feet from Cuthbert Street. From the Somers corner tables it is found that the value of the section 100x100 feet at the northwest corner of Twentieth and Filbert Streets is $49,292; the section 100x100 at the northeast corner of Twenty-First and Filbert Streets is $49,292; the section 16x100 feet at the southwest corner of Twentieth and Filbert Streets is $8,171; and the section at the southeast corner of Twenty-First and Cuthbert Streets is $8,171. The section 295x100 feet on Filbert Street is calculated from the $300 unit value to be worth $88,500, and the corresponding section 295x16 feet on Cuthbert Street is calculated from the $100 unit value to be worth $10,301.

In that portion of the block to the south of the line of Filbert Street the point of contact is found to be 80 feet from Filbert Street and 21 feet from Commerce Street. From the corner tables it is found that the section 80x100 feet at the southwest corner of Twentieth and Filbert Streets is worth $48,858; the section 80x100 feet at the southeast corner of Twenty-First and Filbert Streets is worth $48,858; the section 21x100 feet at the northwest corner of Twentieth and Commerce Streets is worth $13,433; and the value of the section 21x100 feet at the northeast corner of Twenty-First and Com-

merce Streets is $13,433. The section 295x80 feet fronting on Filbert Street is calculated from the $300 unit value to be worth $80,447; and the corresponding section 295x21 feet on Commerce Street is calculated from the $150 unit value to be worth $18,806. Total value of block, $437,562.

Block No. 8—Unit Values—Twenty-First Street south of Filbert, $450; north of Filbert, $350; Twenty-Second Street south of Filbert Street, $350; north of Filbert, $250; Commerce Street, $150; Walden Street, $100.

For the same reasons that Filbert Street was projected through Block No. 7, it was also projected through Block No. 8, and a calculating unit value of $250 placed. Formerly Cuthbert Street also extended through this block. In this case, however, there was no advantage gained thereby, and to reopen the street would be to destroy value rather than create it. The opening of Filbert Street would suffice to give ample accessibility to this area, and additional streets would be a detriment rather than a benefit.

In the portion of the block to the north of the line of Filbert Street the point of over-lap is 130 feet from Filbert Street and 40 feet from Walden Street. From the corner tables it is found that the section 100x100 feet at the northwest corner of Twenty-First and Filbert Streets is worth $45,901; the section 100x100 feet at the northeast corner of Twenty-Second and Filbert Streets is worth $37,750; the section 70x100 feet at the southwest corner of Twenty-First and Walden Streets is worth $30,369; and the section 70x100 feet at the southeast corner of Twenty-Second and Walden Streets is worth $21,821. The section 196x100 feet fronting on Filbert Street is calculated from the unit value of $250 to be worth $54,145, and the corresponding section 196x70 feet on Walden Street is calculated from the $100 unit value to be worth $12,544.

In that portion of the block south of the line of Filbert Street the point of contact is at a distance of 95 feet from Filbert Street, and 48 feet from Commerce Street. From the corner tables it is found that the section 95x100 feet at the southwest corner of Twenty-First and Filbert Streets is worth $53,424; the section 95x100 feet at the southeast corner of Twenty-Second and Filbert Streets is worth $44,134; the section 48x100 feet at the northwest corner of Twenty-First and Commerce Streets is worth $27,772; and the section 48x100 feet at the northeast corner of Twenty-Second and Commerce Streets is worth $22,578. The section 196x95 feet fronting on Filbert Street is calculated from the unit value of $250 to be worth $47,951; and the corresponding section 196x48 feet on Commerce Street is calculated from the $150 unit value to be worth $20,845. Total value of block, $419,234.

Block No. 9—Unit Values—Twenty-Second Street, $250; Twenty-Third Street, $250; Cuthbert Street, $100.

Although the line of Filbert Street, if projected, would include just the southern 51 feet of this block, the block is not of such size as to require such treatment to make it most available for use. This is true, although at one time Filbert Street did extend between Twenty-Second and Twenty-Third Streets within the lines of the block.

The point of contact between Twenty-Second and Twenty-Third Streets is midway between the thoroughfares a distance of 136.5 feet from each

street. From the corner tables it is found the value of the section 100x100 feet at the southwest corner of Twenty-Second and Cuthbert Streets is $29,446; and the value of the section 100x100 at the southeast corner of Twenty-Third and Cuthbert Streets is $29,446. From the unit value of $250 the section fronting 59 feet on Twenty-Second Street is found to be worth $17,287; the section fronting 56 feet on Twenty-Third Street is calculated from the unit value of $250 to be worth $17,287; and the section fronting 73 feet on Cuthbert Street is calculated from the $100 unit value to be worth $5,432.

The two sections of this block respectively fronting on Twenty-Second and Twenty-Third Streets are not of exactly the same value, as one has three feet more frontage than the other. But since the two streets are of exactly the same value the calculation is simplified by averaging their frontage and making the calculation that way. The gross value is correct, but if the lots were in separate ownerships the calculations would not be correct as to the individual holdings. Total value of block, $98,898.

Block No. 10—Unit Values—Twenty-Third Street, $250; Baltimore & Ohio Railroad, $100.

The point of contact is found to be 240 feet from Twenty-Third Street and 145 feet from the average distance on the Baltimore & Ohio Railroad. As the lot lines are irregular the zone tables are used. These tables show from the $250 unit value on Twenty-Third Street that the first 240 feet of this lot is worth $35,800, and the rear 145 feet abutting on the Baltimore & Ohio Railroad is worth $15,328. Total value of block, $51,128.

Block No. 10A—Unit Values—Schuylkill River, $100; Baltimore & Ohio Railroad, $100.

Because of irregular lines this block is also zoned. The ten feet abutting upon the river is found to be worth $2,793, and the ten feet abutting upon the railroad, $2,712. A small intermediate strip of land is worth $440. Total value of block, $5,945.

CONCLUSION.

In conclusion, we hope that this sample appraisal will show the complete practicability of the use of the Somers System for the valuation of land owned by interstate railroads. We believe that the most severe criticism possible of the appraisal submitted herewith will show that it is correct within the narrowest limits of possible differences of opinion as to the relative and actual values of the usefulness of the streets, and the effect of the street accessibility upon the several lots and blocks included in the appraisal. We shall welcome the opportunity of discussion of these values with the Interstate Commerce Commission and the proper railway officials. We believe that this valuation will stand the test of judicial criticism as well as of those who are familiar with land values in the section of the city of Philadelphia through which the appraised line runs.

It will be seen by reference to the accompanying map that unit valuations have been made of streets and blocks, extending for some distance from the railroad terminal and the right-of-way. All of this was deemed

necessary by our appraisers, in order that the information concerning the relation between the land appraised and the contiguous land might be as complete as possible. Wherever the Commission may appraise a terminal property, similar information could be made into a permanent record, and it will thus be possible to make intelligent comparisons of the factors entering into the appraisal of this Philadelphia terminal and the connecting right-of-way, not only with terminals in the same city, but also with terminals in every other city in the United States.

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